Claims Amendments

The claims defining the invention are as follows:

1. (Original) A vehicle suspension control for a vehicle in which each wheel is supported from the chassis of the vehicle through a fluid operated extension element which can control a degree of relative displacement between the wheel and the chassis, the extension element enabling the resilient relative movement between the vehicle and chassis said control comprising:

    a controller;

    a plurality of sensors associated with each wheel of the vehicle;

    a fluid flow controller comprising a fluid flow delivery means and a fluid exhaust means associated with each extension element;

    a first sensor adapted to sense the relative position between the wheel and the chassis and provide a first output tot the controller;

    a second sensor adapted to sense the pressure of the fluid in each extension element and provide a second output to the controller;

    the controller adapted to receive the output from each of the sensors at each wheel, process the outputs and provide a wheel output to the fluid flow controller for each wheel to control the delivery of fluid or the exhaustion of fluid from respective extension element whereby the fluid pressure within each extension element is varied in order that the force applied by the extension elements between the chassis and wheels will maintain the attitude of the chassis substantially constant relative to a plane.

2. (Original) A vehicle suspension control for a vehicle as claimed at claim 1 wherein the plane comprises the general plane of the ground being traversed.

3. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 1 [or 2] wherein the wheel output for each wheel comprises a signal derived from the first output of each of the sensors of the respective wheel together with the first output from the sensors of adjacent wheels.

4. (Original) A vehicle suspension control for a vehicle as claimed at claim 3 wherein the adjacent wheels comprise a wheel which is most adjacent along the transverse axis of the chassis and a wheel which is most adjacent along a longitudinal axis of the chassis.

5. (Currently amended) A vehicle suspension control for a vehicle as claimed at [any one of the preceding claims] claim 1 further comprising a third sensor mounted to the vehicle and which is adapted to provide a third output which is representative of the movement of the chassis in the vertical sense over the ground relative to free space.

6. (Original) A vehicle suspension control for a vehicle as claimed at claim 5 further comprising a fourth sensor adapted to provide a fourth output representative of the lateral acceleration of the chassis.

7. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 5 [or 6] further comprising a fifth sensor adapted to provide a fifth output representative of the steering angle of the steering wheels.

8. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 5 [or 6 or 7] further comprising a sixth sensor adapted to provide a sixth output representative of the speed of the chassis over the ground.

9. (Currently amended) A vehicle suspension control for a vehicle as claimed at [any one of the preceding claims] claim 1 the wheel output signal for a wheel comprises a summation of the first output from the first sensor of the respective wheel, the first output from the first sensor of each of the adjacent wheels and the second output from the second sensor of the respective wheel.

10. (Cancelled)

11. (Original) A vehicle suspension control for a vehicle as claimed at claim 9 wherein the weighting applied to the first output of the respective wheel and the first output of each of the adjacent wheels is of the order of 2:1.

12. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 9 [or 10] wherein the controller includes an adjustable control connected to the controller which provides a control signal which can be adjusted to vary the weighting or bias applied to the first outputs from each of the first sensors in determining the wheel output to control the permitted degree of change in attitude of the chassis relative to the plane.

13. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 9 [or 10 or 11] wherein the summation of the first signals is biased by the control signal before the second signal is included to produce a resultant signal.

14. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 9 [or 10 or 11 or 12] wherein the weighting applied between the resultant signal and the second signal in deriving the wheel output is of the order of 10:1.

15. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 11 [or any one of claims 12 and 13 as dependant from claim 11] wherein the adjustable control provides a control signal comprising a pitch control, a roll control and a height control component.

16. (Original) A vehicle suspension control for a vehicle as claimed at claim 14 wherein the control signal comprises a first control signal which is set to control the height of the chassis relative to the wheels.

17. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 14 [or 15] wherein the control signal comprises a second control signal which is set to control the permitted degree of roll of the chassis relative to the plane.

18. (Currently amended) A vehicle suspension control for a vehicle as claimed at claim 15 [or 15 or 16] wherein the control signal comprises a third control signal which is set to control the permitted degree of variation of pitch of the chassis relative to the plane.

19. (Currently amended) A vehicle suspension control for a vehicle as claimed at [any one of the preceding claims] claim 1 wherein the controller includes a gyroscopic device adapted to provide a signal indicative of the datum plane.

20. (Currently amended) A vehicle suspension control for a vehicle as claimed at [any one of the preceding claims] claim 1 wherein the datum plane can be varied in its inclination.

21. (Cancelled) A vehicle suspension control for a vehicle substantially as herein described with reference to the accompanying drawings.

22. (Original) A damping control for a vehicle comprising a fluid operated damper between each wheel and the chassis each damper being capable of providing a variable degree of damping, each damper being controlled by a damper control, the control comprising a set of first sensors which provide a first output indicative of the

relative position between the wheels and the chassis and a set of third sensors adapted to provide a third output indicative of the relative motion between the wheels and the chassis, the control further comprising a second control which receives the signal from the first and third sensors for each wheel, said second control providing a damping output to the damper control of each damper to vary the degree of damping applied by the damper in proportion to the third output wherein the signal from the third sensor is allowed or inhibited by the relative motion output of the first sensors.

23. (Original) A damping control for a vehicle as claimed at claim 21 wherein the chassis will maintain a constant attitude relative to the horizontal.

24. (Cancelled) A damping control for a vehicle substantially as herein described with reference to the accompanying drawings.

25. (Currently amended) A vehicle suspension control as claimed at [any one of claim 1 to 20 together with a damper control as claimed at any one of claims 21 to 23] claim 1 where the first sensor, the first output, the third sensor and the third output of the vehicle suspension control comprise the first sensor, the first output, the third sensor and the third output of the damper control.

26. (Original) A suspension system for a vehicle comprising a chassis and at least front and rear axles supporting wheels for rotational movement of the wheels wherein said suspension system comprises resilient support members to provide resilient support for each of said wheels from said chassis, said resilient support members being controllable by a controller to vary relative displacement between each said wheel and said chassis and wherein said controller receives control signals from sensors operatively associated with said suspension system to provide signals indicative of relative displacement between each said wheel and said chassis and wherein in response to said signals said controller provides a control

signal to each said resilient support member to thereby control said relative displacement between each said wheel and said chassis so as to maintain the attitude of said chassis substantially parallel with a plane of average axle articulation wherein said plane of average axle articulation comprises a plane bisecting an included angle formed between first and second planes wherein said first plane is a plane passing through said front axle of said vehicle and said second plane is a plane passing through said rear axle of said vehicle.

27. (Currently amended) A suspension system for a vehicle as claimed at claim 25 wherein the control signal provided to each said resilient support member is derived from the relative displacement of a respective wheel associated with a resilient support member and relative displacement of adjacent wheels associated with adjacent resilient support members.

28. (Cancelled)

29. (Currently amended) A suspension system for a vehicle as claimed at claim 25 [or 26] wherein the control signal is derived from the summation of the relative displacement of a respective wheel and the displacement of adjacent wheels.

30. (Original) A suspension system for a vehicle as claimed at claim 27 wherein said respective wheel and said adjacent wheels have a weighting in the ratio of 2:1, said adjacent wheels each having said weighting of 1.

31. (Currently amended) A suspension system for a vehicle as claimed at [any one of claims 25 to 28] claim 25 wherein the system comprises at least one sensor adapted to output a lateral acceleration signal indicative of said vehicles lateral acceleration and said controller controlling said relative displacement of said wheels from said chassis in response to said lateral acceleration signal so as to compensate for chassis roll and thereby maintain said attitude of said chassis parallel with said plane of average axle articulation.

32. (Currently amended) A suspension system for a vehicle as claimed at [any one of claims 25 to 29] claim 25 wherein the system is adapted to provide vertical acceleration signals indicative of each said wheels vertical acceleration and said controller controlling said relative displacement of said wheels from said chassis in response to each said vertical acceleration so as to maintain said attitude of said chassis parallel with said plane of average axle articulation.

33. (Currently amended) A suspension system for a vehicle as claimed at [any one of claims 25 to 30] claim 25 wherein the system comprises resilient support members adapted to accommodate a fluid to provide said resilient support and the system actuates said resilient support members by supplying fluid under pressure and said system further comprises sensors to output to said controller signals derived from fluid pressure in each said resilient member and said system controlling said fluid pressure in each said resilient member to thereby maintain substantially equal pressures in each said resilient support members.

34. (Cancelled)

35. (Currently amended) A suspension system for a vehicle as claimed at [any one of claims 25 to 29] claim 25 wherein the relative displacement and said fluid pressure have a weighting ratio in the range of 20:1 to 5:1 where said pressure signal assumes said weighting of 1.

36. (Original) A suspension system for a vehicle as claimed at claim 32 wherein the weighting ratio is 10:1 such that the pressure signal assumes said weighting of 1.

37. (Cancelled) A suspension system for a vehicle substantially as herein described with reference to the accompanying drawings.

38. (Currently amended) A vehicle in which each wheel is supported from the chassis of the vehicle through a fluid operated extension element which can control a degree of relative displacement between the wheel and the chassis, the extension element enabling the resilient relative movement between the vehicle and chassis and a vehicle suspension control as claimed at [any one of claims 1 to 20] claim1, said vehicle suspension control being associated with the extension elements for the purpose of controlling the extension elements.

39. (Currently amended) A vehicle in which each wheel is supported from the chassis of the vehicle through an extension element which can control a degree of relative displacement between the wheel and the chassis, the extension element enabling the resilient relative movement between the vehicle and chassis and a damper associated with each extension element, the operation of the dampers being controlled by a damping control as claimed at [any one of claims 21 to 23] claim 21 .

40. (Currently amended) A vehicle having a suspension as claimed at [any one of claims 24 to 34] claim 24 .